

REMARKS

Claims 1, 10 and 18 are amended, claims 14-15 are canceled without prejudice or disclaimer, and no claims are added; as a result, claims 1-13, 16-23, and 85-96 are now pending in this application.

Applicant herein amends the present claims without conceding to the appropriateness of the rejections in the Office Action. Applicant expressly reserves the right to file a continuation application to any subject matter previously presented.

§103 Rejection of the Claims

Claims 1, 3, 4, 7-9, 18, and 96 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo (U.S. Patent No. 5,619,051) in view of Werkhoven et al. (U.S. Publication No. 20010041250). Applicant respectfully traverses.

Claim 1 recites, in part, “a floating gate opposing the channel region and separated therefrom by a gate oxide, wherein the floating gate includes a horizontally oriented floating gate formed alongside of a body region; . . . and wherein the control gate is separated from the floating gate by a graded, asymmetrical low tunnel barrier intergate insulator formed by multiple atomic layer deposition (ALD).” Applicant can not find these features in the applied references. As a result claim 1 and its dependent claims are believed to be allowable.

Claim 18 recites, in part, “wherein the floating gate includes a horizontally oriented floating gate formed alongside of a body region; . . . a metal oxide intergate insulator formed by atomic layer deposition on the metal layer, wherein the metal oxide intergate insulator includes an asymmetrical metal oxide having a number of small compositional ranges such that gradients can be formed in an applied electric field which produce different barrier heights at an interface with the floating gate and control gate; a second metal layer formed on the metal oxide intergate insulator, wherein the second metal layer has a different work function from the first metal layer.” Applicant can not find these features in the applied references. As a result claim 18 and its dependent claims are believed to be allowable.

Claims 10, 11, 14-15, and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo (U.S. Patent No. 5,619,051) in view of Werkhoven et al. (U.S.

Publication No. 20010041250) and further in view of Orlowski et al. (U.S. Patent No. 6,433,382). Applicant respectfully traverses.

Claim 10 recites, in part, “wherein the floating gate includes a horizontally oriented floating gate formed alongside of the body region.; . . . and wherein the control gate is separated from the floating gate by a graded, asymmetrical low tunnel barrier intergate insulator, which is formed by atomic layer deposition (ALD), has a tunneling barrier of less than 2.0 eV, and has a number of small compositional ranges such that gradients can be formed which produce different barrier heights at an interface with the floating gate and control gate.” Applicant can not find these features in the applied references. As a result claim 10 and its dependent claims are believed to be allowable.

Claims 5 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo (U.S. Patent No. 5,619,051) in view of Werkhoven et al. (U.S. Publication No. 20010041250) as applied to claim 1 above, and further in view of Eguchi et al. (U.S. Patent No. 5,618,761). Claims 2, 20-22, and 85-86 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Endo (U.S. Patent No. 5,619,051) in view of Werkhoven et al. (U.S. Publication No. 20010041250) and further in view of Shinkawata et al. (U.S. Publication No. 20020008324). Applicant respectfully traverses. These claims are dependent claims and are believed to be allowable with their parent claims.

Reconsideration and allowance of all pending claims is requested. In the event that any claim remains rejected, the undersigned requests a telephone interview, which the undersigned believes will move the application to allowance.

Allowable Subject Matter

Claims 16-17, 19, and 87-95 were allowed.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 349-9587 to facilitate prosecution of this application.

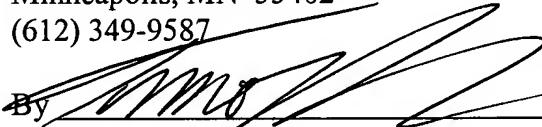
If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 24 August '06

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